Date: Fri, 15 Apr 94 10:59:18 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #419
To: Info-Hams

Info-Hams Digest Fri, 15 Apr 94 Volume 94 : Issue 419

Today's Topics:

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 14 Apr 1994 17:39:51 GMT
From: thehulk!mfnjctn!david.little@uunet.uu.net
Subject: Converting CB to 10 meter
To: info-hams@ucsd.edu

-> From: erik@csn.org (Erik Mugele)
-> Newsgroups: rec.radio.amateur.misc,rec.radio.amateur.homebrew
-> Subject: Converting CB to 10 meters
-> Date: Thu, 17 Mar 1994 14:21:33 GMT
-> Message-ID: <CMtBvy.ID3@csn.org>
-> Organization: Colorado SuperNet, Inc.
->
-> I have had several QSOs with people on 10 meters who were using conve
-> CBs. I have a CB sitting in my junk box and was wondering if it coul
-> to use in the 10 meter band. Is there some service center I can send
-> to have it done? Is it something I can do myself? (The CB in questi
-> a Cobra Model 19 Plus, manufactured in 1988.) In general, how hard i
-> to do this (ie maybe easier on older model CBs)?
->

-> Enquiring minds want to know. :-)
->
-> TNX and 73,
-> Erik
-> --
-> Erik Mugele   *   erik@csn.org   * "O child learn your ABZ's
->   *   mugele@sil.org   * and memorize them well
-> Ham Radio: N5XYX * No NeXTMail yet!   * and you shall learn to talk
-> DoD #: 1030   * Phone: 719.550.6202 * and read and write and spel

Erik,
    This unit could probably be used for 10m AM. A SSB unit would be a better candidate. The PLL chip is the place to start. The 8719 or 8734 chips are used ny Cobre (UNIDEN) radios and are quite easily unlocked. But then you have to move the unit up from 27.4 to the 28-30 Mhz range, which is quite a pull on the tuned circuits for 27 mhz receive and transmit. You can install a wider range varactor diode often referred as a super diode by the CB hop-up guys, and then the Clarifier must be modified to track on transmit, then widened to 10KC to track between the fixed channels. A "Super Slide" diode for USB/LSB/AM (3 total if you plan on utilizing all 3 modes will help, as well as a 10-turn pot to replace the clarifier and turn it into a pseudo vfo. Then, the receive and transmit has to be "broadbanded" to provide sensitivity and uniform output across the newly widened frequency range. It is an excellent project, and much will be learned from doing the modifications, but a close-out on a uni 2510 would fit the bill better in the long run.
   For info on what is available in the CB HopUp arena, contact Lew Franklin of CB City International. He has ads in most electronics magazine classified sections, and provides info, parts, etc. for the modifications. Good luck with the project.

Date: 15 Apr 94 06:22:08 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!swrinde!sgiblab!news.kpc.com!amd!netcomsv!zygot!ravel!duncan@network.ucsd.edu
Subject: FM Broadcast as a freq. ref.
To: info-hams@ucsd.edu

In article <Co7rLo.5o8@cbnewsm.cb.att.com> hellman@cbnewsm.cb.att.com (eric.s.hellman) writes:
>Recently Gary (I hope my memory is correct) commented that fm stations
>may be assigned frequencies as much as 10 KHz away from the standard.

Your memory is correct, but the statement isn't. The 10 kHz offset is used when necessary by co-channel television stations to greatly reduce the effect of visual interference.

--
K-FOX| w ["] | WA6MBV
94.5 |... |___|_____..duncan@ravel.okay.com | Jim Duncan
KUFX | H | 408.297.5977
******** _____I_____/ 37 3 10N/121 59 10W   **************

Date: 15 Apr 94 16:49:46 GMT
From: news-mail-gateway@ucsd.edu
Subject: SAREX Keps 4/15/94 at 16:40 UTC
To: info-hams@ucsd.edu

SB SAREX @ AMSAT $STS-59.018
SAREX Keps 4/15 at 16:40 UTC

Greenbelt, MD, 4/15/94 at 16:40 UTC

The official SAREX element set for today is JSC-021. This element set
was generated by Gil Carman, WA5NOM, of the Johnson Space Flight Center.

STS-59
1 23042U 94020A   94105.62622017 .00203357 11079-4 10947-3 0   213
2 23042 56.9933 234.1397 0007233 279.9940 80.0358 16.22652200 1014

Satellite: STS-59
Catalog number: 23042
Epoch time: 94105.62622017   =   (15 APR 94   15:01:45.42 UTC)
Element set: 021
Inclination: 56.9933 deg
RA of node: 234.1397 deg   Space Shuttle Flight STS-59
Eccentricity: .0007233   Keplerian Element set JSC-021
Arg of perigee: 279.9940 deg   from NASA flight Day 7 vector
Mean anomaly: 80.0358 deg
Mean motion: 16.22652200 rev/day   G. L. Carman
Decay rate: 2.03357e-03 rev/day^2   NASA Johnson Space Center
Epoch rev: 101
Checksum: 271

Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group
/EX

Date: Thu, 14 Apr 1994 22:40:06 MDT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!
newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!ve6mgs!usenet@network.ucsd.edu
Subject: Weekly Solar Terrestrial Forecast & Review for 15 April

To: info-hams@ucsd.edu

--- SOLAR TERRESTRIAL FORECAST AND REVIEW ---
April 15 to April 24, 1994

Report Released by Solar Terrestrial Dispatch
P.O. Box 357, Stirling, Alberta, Canada
T0K 2E0
Accessible BBS System: (403) 756-3008

For information regarding the powerful new SKYCOM HF and refractive VHF propagation prediction software, contact: Oler@Rho.Uleth.CA, or COler@Solar.Stanford.Edu.

SOLAR AND GEOPHYSICAL ACTIVITY FORECASTS AT A GLANCE

	10.7 cm	HF Propagation				+/-		CON	SID				AU.BKSR			DX	Mag		Aurora		
	SolrFlx	LO	MI	HI	PO	SWF	%MUF	%	ENH	LO	MI	HI	LO	MI	HI	%	K	Ap	LO	MI	HI
15	080	G	G	F	F	05	-30	70	05	NA	NA	NA	02	10	25	30	4	22	NV	LO	MO
16	080	G	F	P	P	05	-30	70	05	NA	NA	NA	03	15	30	30	5	25	NV	LO	MO
17	085	G	P	VP	VP	05	-40	65	05	NA	NA	NA	05	35	45	25	6	40	NV	MO	HI
18	085	G	F	P	P	05	-35	65	05	NA	NA	NA	04	30	40	25	5	30	NV	MO	MO
19	085	G	F	P	P	10	-30	65	10	NA	NA	NA	03	20	35	30	4	20	NV	LO	MO
20	090	G	G	F	F	10	-25	65	10	NA	NA	NA	02	15	30	30	3	15	NV	NV	MO
21	090	G	G	F	F	10	-20	65	10	NA	NA	NA	02	10	25	35	3	12	NV	NV	MO
22	090	G	G	F	F	10	-15	65	10	NA	NA	NA	02	10	20	35	2	10	NV	NV	LO
23	090	G	G	F	F	10	-10	65	10	NA	NA	NA	02	10	20	40	2	10	NV	NV	LO
24	095	G	G	F	F	10	-10	65	10	NA	NA	NA	02	10	20	40	2	10	NV	NV	LO

PEAK PLANETARY 10-DAY GEOMAGNETIC ACTIVITY OUTLOOK (15 APR - 24 APR)

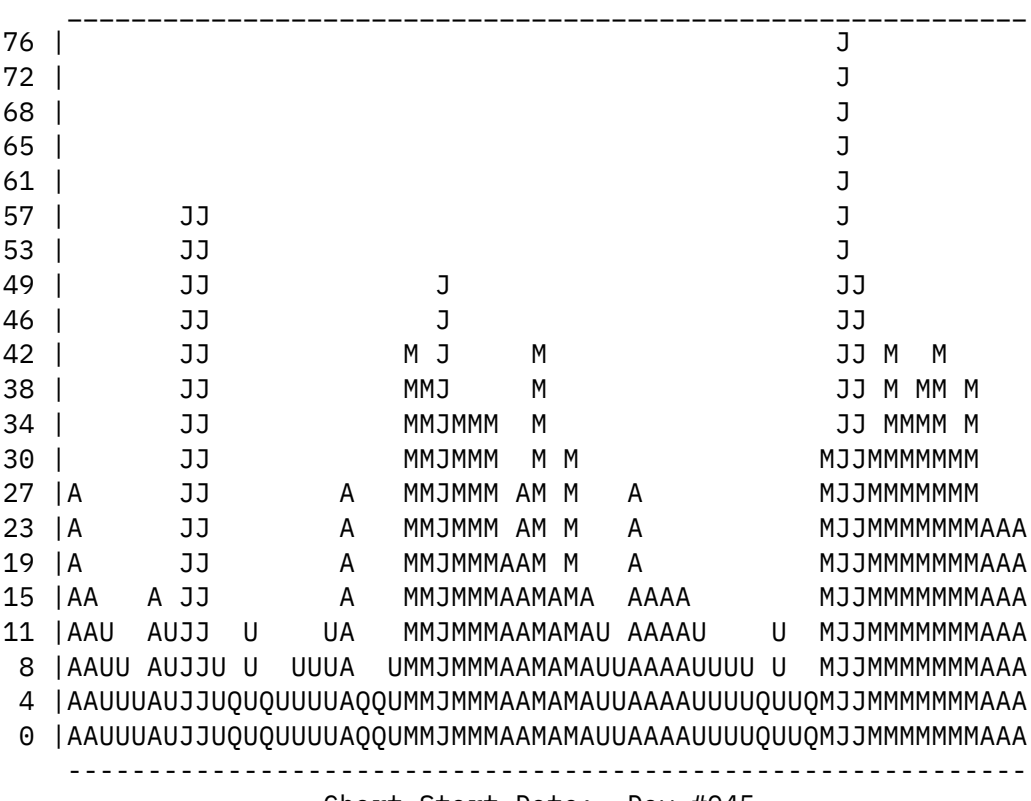
EXTREMELY SEVERE										HIGH
VERY SEVERE STORM										HIGH
SEVERE STORM										MODERATE
MAJOR STORM			*							LOW - MOD.
MINOR STORM			***	**						LOW
VERY ACTIVE	**	**	***	***	**					NONE
ACTIVE	***	***	***	***	***	***	*			NONE
UNSETTLED	***	***	***	***	***	***	***	**	**	NONE
QUIET	***	***	***	***	***	***	***	***	***	NONE
VERY QUIET	***	***	***	***	***	***	***	***	***	NONE

Geomagnetic Field Conditions	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Anomaly Intensity
	Given in 8-hour UT intervals										

CONFIDENCE LEVEL: 70%

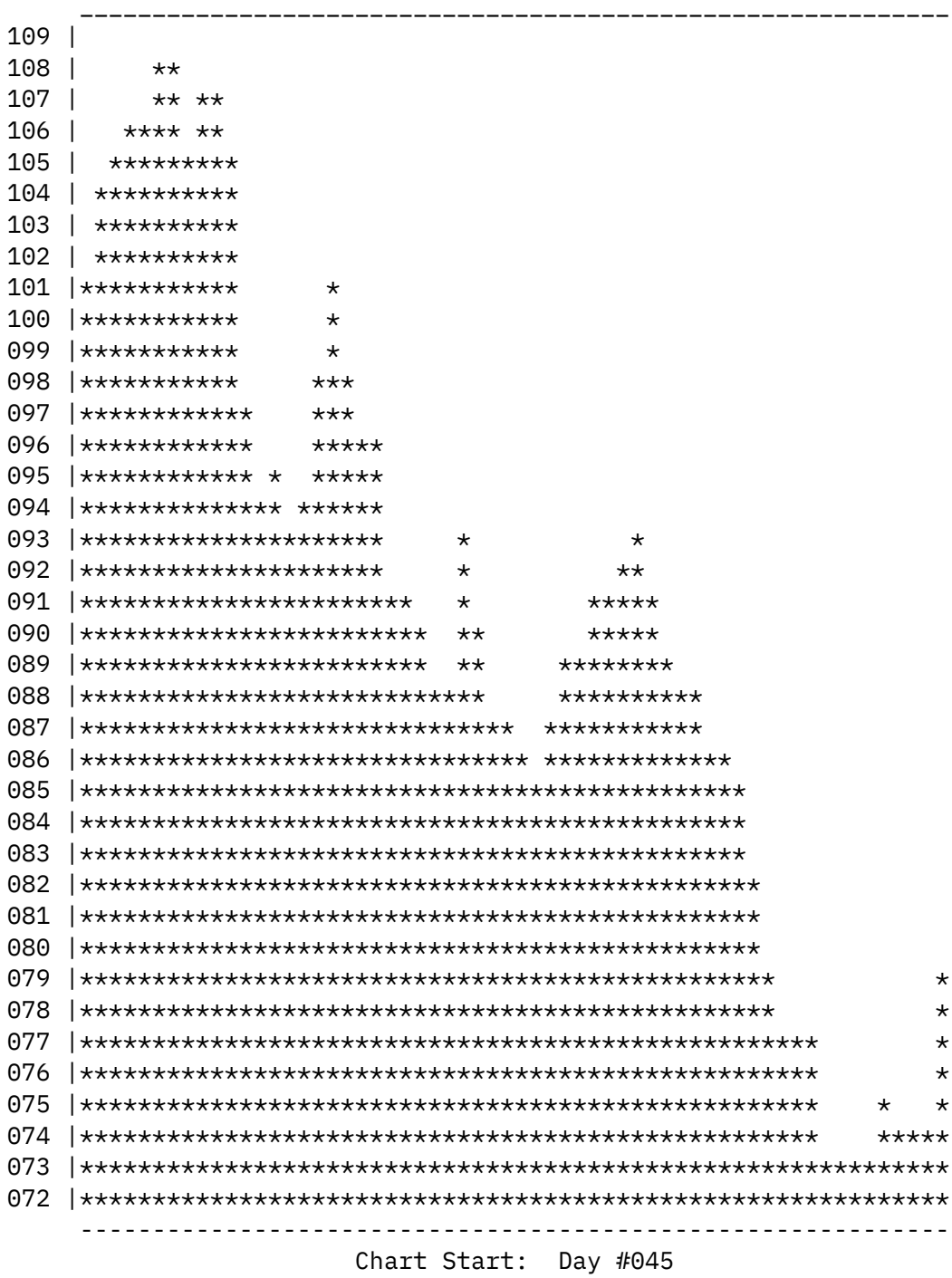
NOTES:
Predicted geomagnetic activity is based heavily on recurrent phenomena. Transient energetic solar events cannot be predicted reliably over periods in excess of several days. Hence, there may be some deviations from the predictions due to the unpredictable transient solar component.

60-DAY GRAPHICAL ANALYSIS OF GEOMAGNETIC ACTIVITY

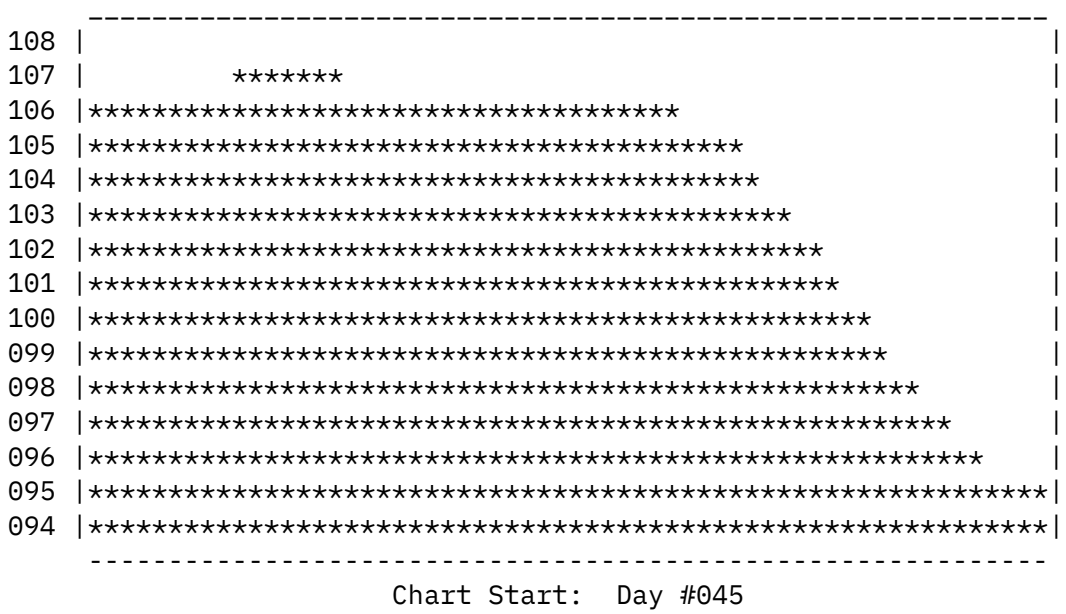


NOTES:
This graph is determined by plotting the greater of either the planetary A-index or the Boulder A-index. Graph lines are labelled according to the severity of the activity which occurred on each day. The left-hand column represents the associated A-Index for that day.
Q = Quiet, U = Unsettled, A = Active, M = Minor Storm,
J = Major Storm, and S = Severe Storm.

CUMULATIVE GRAPHICAL CHART OF THE 10.7 CM SOLAR RADIO FLUX

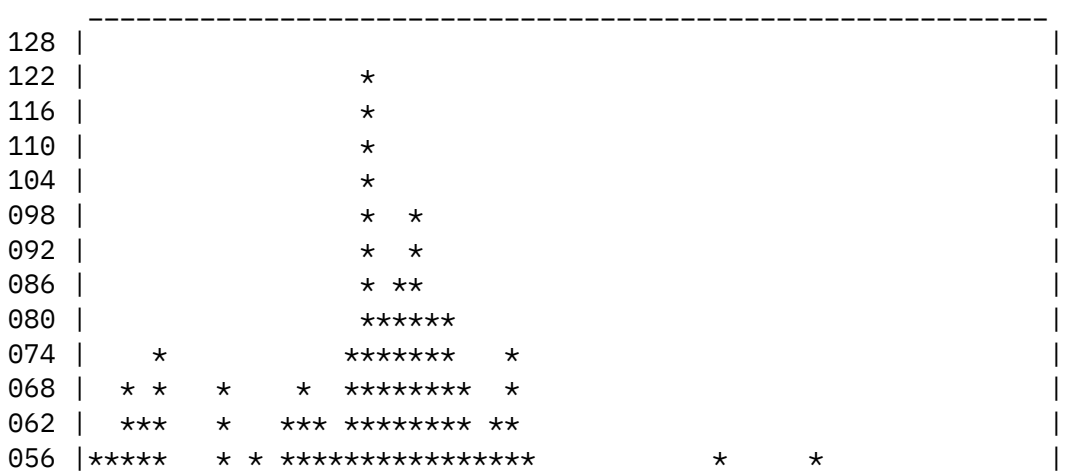


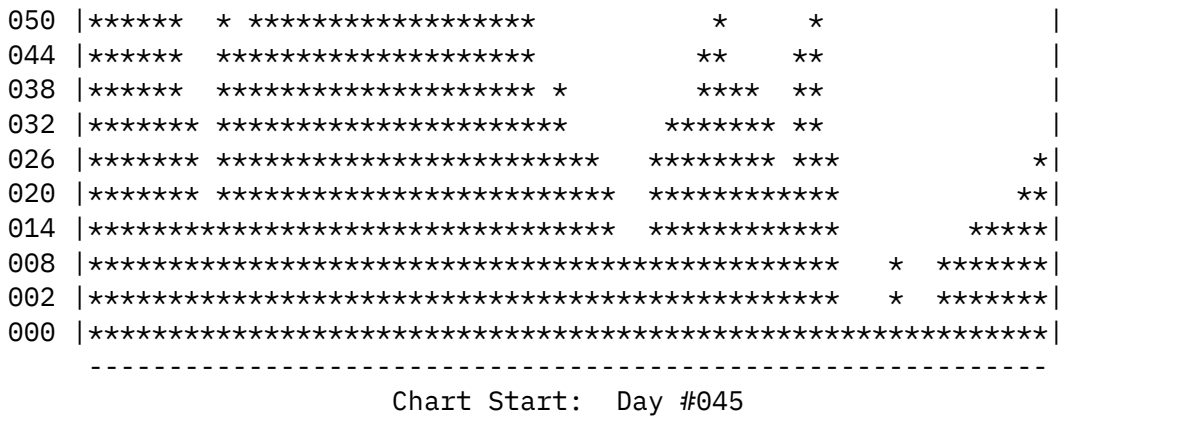
GRAPHICAL ANALYSIS OF 90-DAY AVERAGE SOLAR FLUX



NOTES:
The 10.7 cm solar radio flux is plotted from data reported by the Penticton Radio Observatory (formerly the ARO from Ottawa). High solar flux levels denote higher levels of activity and a greater number of sunspot groups on the Sun. The 90-day mean solar flux graph is charted from the 90-day mean of the 10.7 cm solar radio flux.

CUMULATIVE GRAPHICAL CHART OF SUNSPOT NUMBERS

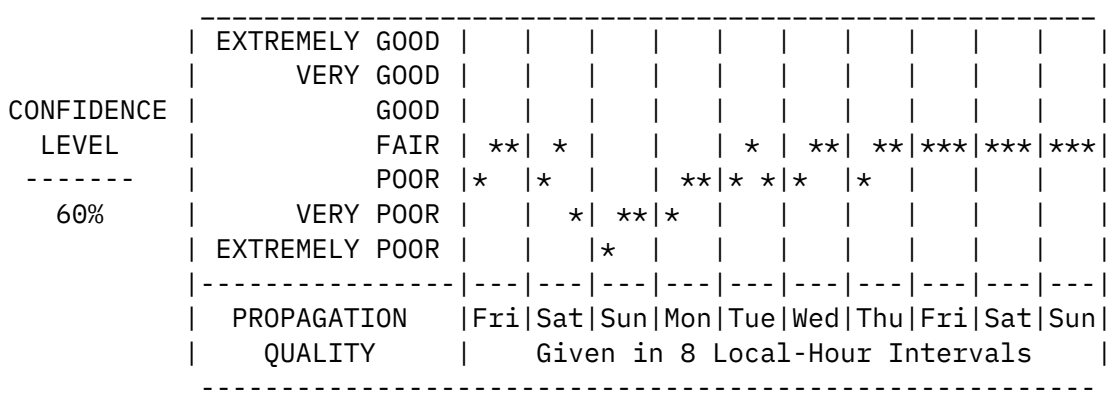




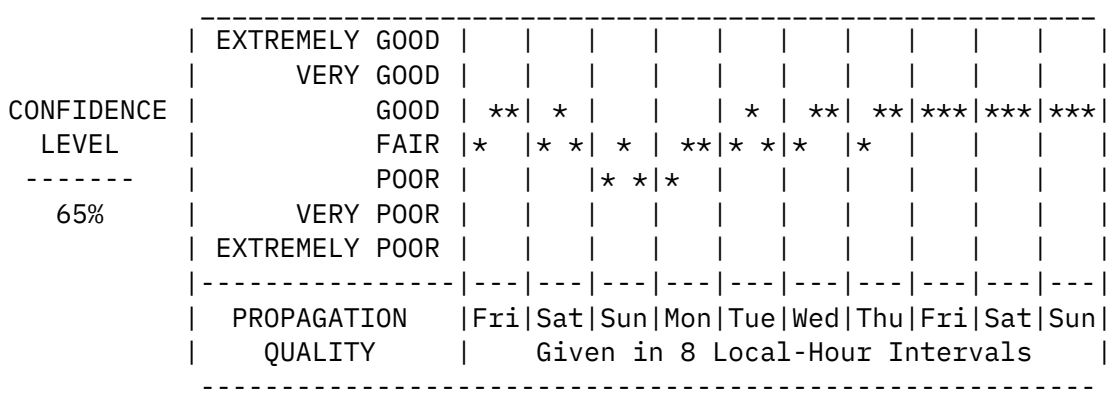
NOTES:
The graphical chart of sunspot numbers is created from the daily sunspot number counts as reported by the SESC.

HF RADIO SIGNAL PROPAGATION PREDICTIONS (15 APR - 24 APR)

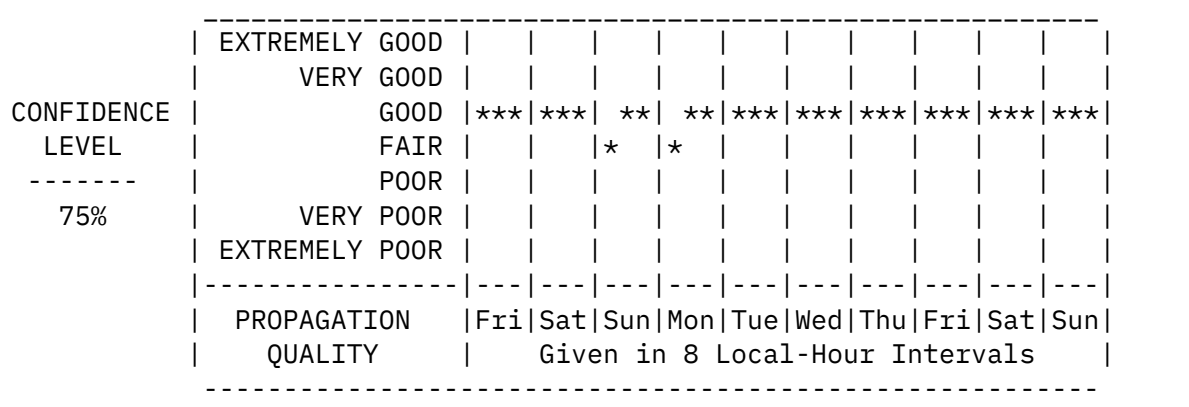
High Latitude Paths



Middle Latitude Paths



Low Latitude Paths

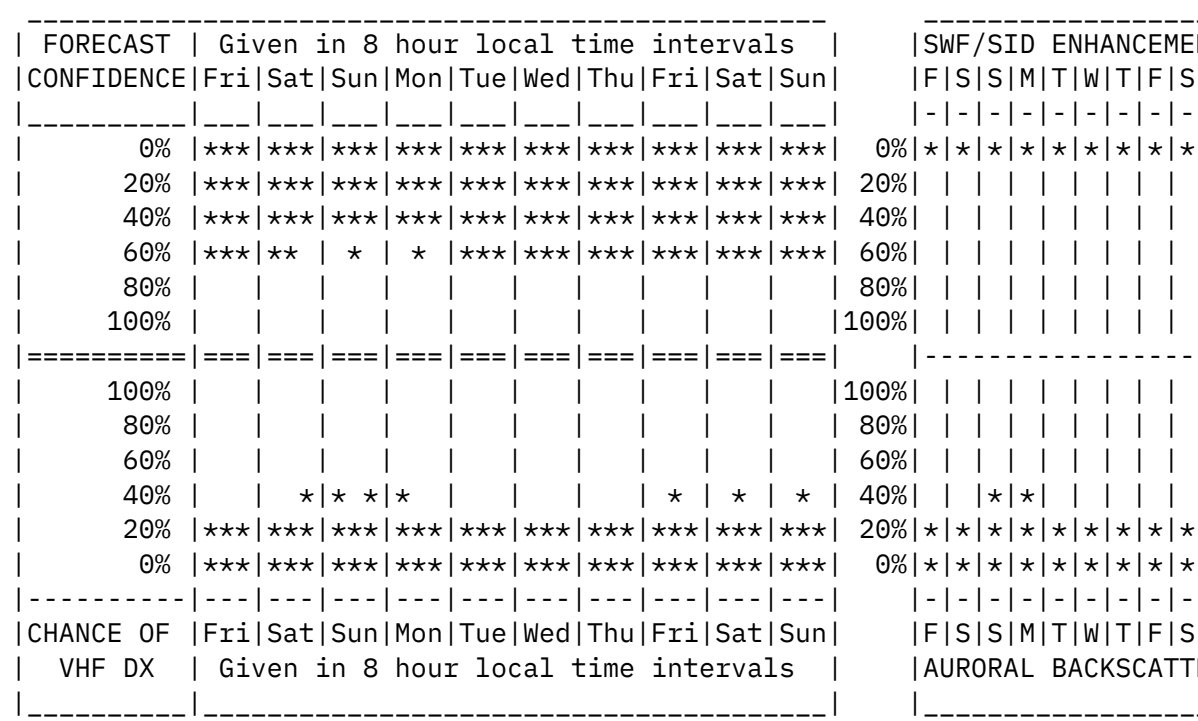


NOTES:

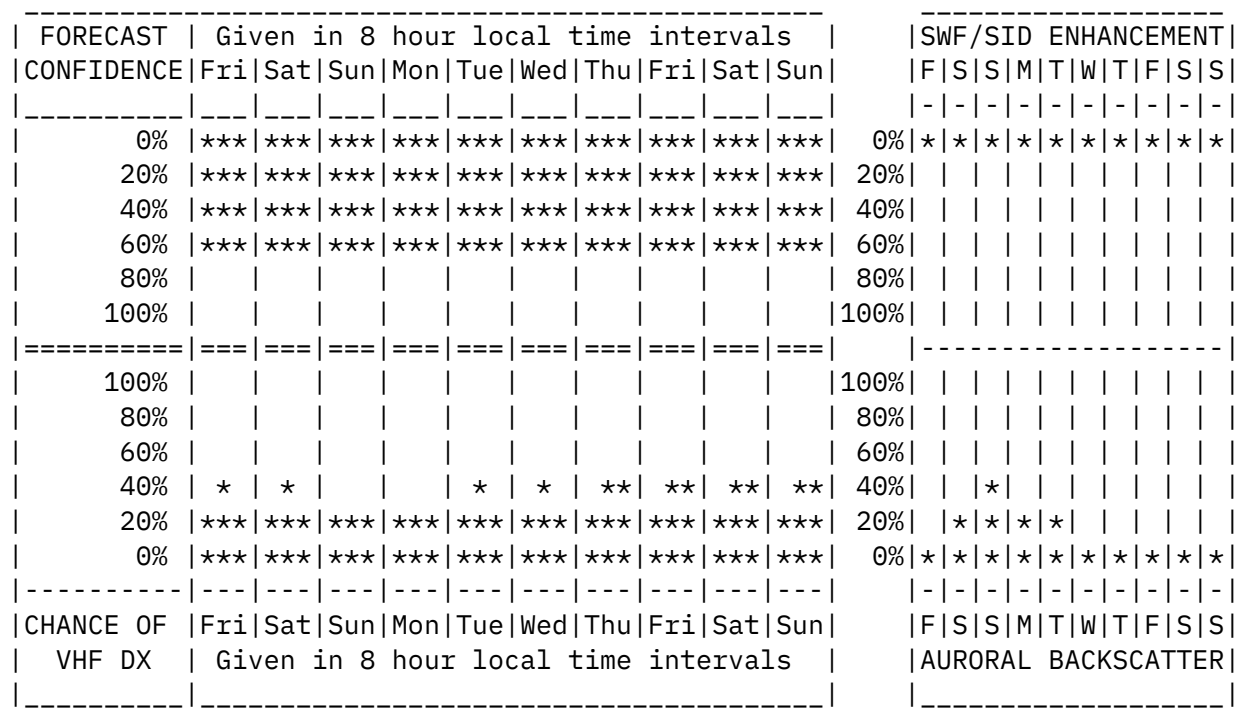
NORTHERN HEMISPHERE		SOUTHERN HEMISPHERE	
High latitudes >= 55	deg. N.	High latitudes >= 55	deg. S.
Middle latitudes >= 40 < 55	deg. N.	Middle latitudes >= 30 < 55	deg. S.
Low latitudes < 40	deg. N.	Low latitudes < 30	deg. S.

POTENTIAL VHF DX PROPAGATION PREDICTIONS (15 APR - 24 APR)
INCLUDES SID AND AURORAL BACKSCATTER ENHANCEMENT PREDICTIONS

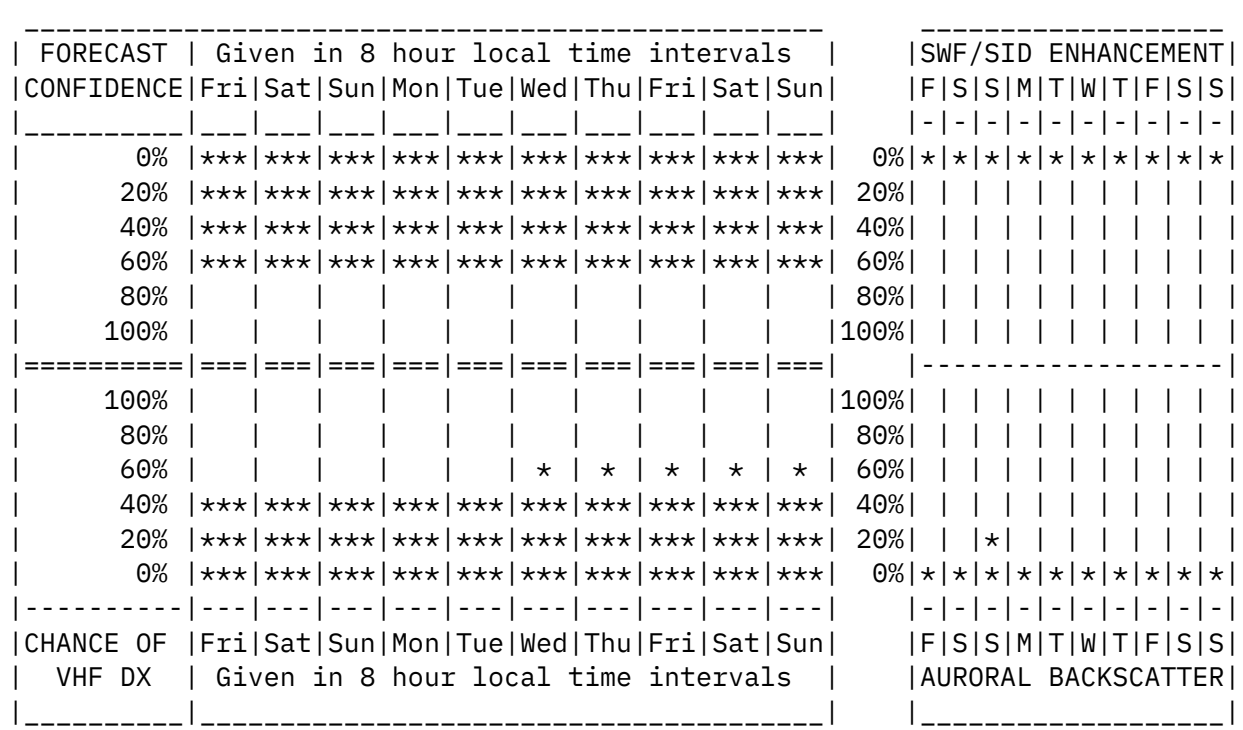
HIGH LATITUDES



MIDDLE LATITUDES



LOW LATITUDES



NOTES:

These VHF DX prediction charts are defined for the 30 MHz to 220 MHz bands. They are based primarily on phenomena which can affect VHF DX

propagation globally. They should be used only as a guide to potential DX conditions on VHF bands. Latitudinal boundaries are the same as those for the HF predictions charts.

AURORAL ACTIVITY PREDICTIONS (15 APR - 24 APR)

High Latitude Locations

CONFIDENCE LEVEL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
EXTREMELY HIGH										
VERY HIGH										
HIGH		*								
MODERATE (70%)	*	***	***	**	*	*				
LOW	***	***	***	***	***	***	***	***	***	***
NOT VISIBLE	***	***	***	***	***	***	***	***	***	***
AURORAL INTENSITY	Eve.Twilight/Midnight/Morn.Twilight									

Middle Latitude Locations

CONFIDENCE LEVEL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
EXTREMELY HIGH										
VERY HIGH										
HIGH										
MODERATE (65%)		**	*							
LOW	**	***	***	**	*					
NOT VISIBLE	***	***	***	***	***	***	***	***	***	***
AURORAL INTENSITY	Eve.Twilight/Midnight/Morn.Twilight									

Low Latitude Locations

CONFIDENCE LEVEL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
EXTREMELY HIGH										
VERY HIGH										
HIGH										
MODERATE (80%)										
LOW		*								
NOT VISIBLE	***	***	***	***	***	***	***	***	***	***
AURORAL INTENSITY	Eve.Twilight/Midnight/Morn.Twilight									

NOTE:
     Version 2.00b of our Professional Dynamic Auroral Oval Simulation

Software Package is now available. This professional software is particularly valuable to radio communicators, aurora photographers, educators, and astronomers. For more information regarding this software, contact: "Oler@Rho.Uleth.CA", or "COler@Solar.Stanford.Edu".

     For more information regarding these charts, send a request for the document, "Understanding Solar Terrestrial Reports" to: "Oler@Rho.Uleth.Ca" or to: "COler@Solar.Stanford.Edu". This document, as well as others and related data/forecasts exist on the STD BBS at: (403) 756-3008.

** End of Report **

Date: Thu, 14 Apr 1994 14:33:34 GMT
From: ihnp4.ucsd.edu!pacbell.com!sgiblab!wetware!spunky.RedBrick.COM!psinntp!psinntp!arrl.org!zlau@network.ucsd.edu
To: info-hams@ucsd.edu

References <phb.766157411@melpar>, <1994Apr13.123354.4178@ke4zv.atl.ga.us>, <phb.766246402@melpar>≥ÿ
Subject : Re: 6 meters

Paul H. Bock (phb@syseng1.melpar.esys.com) wrote:
: gary@ke4zv.atl.ga.us (Gary Coffman) writes:

: >or a MMIC stage can boost the level to 1 mW easily. This level mismatch
: >shouldn't be a deterrent, but it is something you need to be aware of,
: >if you're expecting plug and play.

:   Ah, yes, that's the key phrase: "Plug and play." Many newer hams
: expect to be able to just do exactly that, without worrying about levels
: or anything else. DEM told me once that they get a lot of calls asking
: "Can I just plug my Suribachi JAT-1500 into your 432 transverter?" and
: their answer is usually something like "Well, what's the output level?"
: which is met by silence on the other end.....Part of the problem may be

A difficulty is that some radios, (and I think this includes the IC-725), has *no* provisions for a transverter. Thus, if you want a low level transmit output and separate receive connection, you have to go into the radio and bring out the appropriate connections. Of course, this is *precisely* what the original poster didn't want to do. This trend is most noticeable on the less expensive or budget radios; the top of the line models retain such features as transverter jacks.

--
Zack Lau KH6CP/1   2 way QRP WAS
                           8 States on 10 GHz
Internet: zlau@arrl.org   10 grids on 2304 MHz

Date: 14 Apr 1994 15:40:47 -0700
From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!eff!
news.kei.com!hookup!news2.sprintlink.net!news.sprintlink.net!connected.com!
seatimes.com!seatimes.com!@@ihnp4.ucsd.edu
To: info-hams@ucsd.edu

References <1994Apr11.144914.25061@ke4zv.atl.ga.us>, <822@comix.UUCP>,
<1994Apr14.091019.10362@ke4zv.atl.ga.us>ne
Subject : Re: Any experience with doppler rdf (radio direction finders)?

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: Any system that won't work for that bane of the repeater owner, very
: brief bursts of interference that kerchunk the machine, isn't going to

: Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
: Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary

I've wondered why the GPS technology can't be used in reverse. Put 3-4
stable receivers up on hills about 30-50 km apart (maybe even 100 km if
the hills are high enough). Clock the anomolies of the incoming signal
with something akin to an atomic clock and forward from all receivers to
a centeral processing point. The anomolies would include 1) start of a
signal, 2) stop of a signal, 3) non-repeating characteristics (DTMF
start/stop), 4) etc.

Time stamp the anomolies at each repeater. The centeral processor could
command the receivers to another frequency to do a quick check of the
propogation characteristics (the central site transmits a known signal,
each receiver time stamps it, then each receiver transmits in sequence
with the other receivers timestamping. All timestamps get sent to the
central processor. The central processor knows everybodies exact
location and can thereby deduce the clock timing differences for each
site. Ergo, we now have adjusted timings for the original signal.

It falls down to simply solving a set of simultaneous equations involving
the locations of all receivers and the timestamps of the anomolies.

Given that the unknowns are X0, Y0, and T0 (coordinates of LID and times
signal was transmitted) with knowns X1, Y1, T1 (coordinates of receiver 1
and time signal arrived there), X2, Y2, T2 (ditto #2), and X3, Y3, T3 (#3)
you get these three equations (assuming only three receivers):

```
    (X1 - X0)^2 + (Y1 - Y0)^2 = (T1 - T0)^2 * c^2
    (X2 - X0)^2 + (Y2 - Y0)^2 = (T2 - T0)^2 * c^2
    (X3 - X0)^2 + (Y3 - Y0)^2 = (T3 - T0)^2 * c^2
```

Three equations, three unknowns ==> should be solvable. After three pages of hand written stuff I've dropped a term or two. Anybody care to simplify?

--Steve Butler, KG7JE

End of Info-Hams Digest V94 #419
****